KVARTA

RF POWER MONITOR
USER'S MANUAL

Contents

1. INTRODUCTION

1.1. About KVARTA

For more than 10 years, Kvarta has been developing products for Broadcasters and CATV providers. Our devices are used by major radio and television broadcasters and regulatory agencies.

Broadcasting is our passion. We know what you want and we have designed many devices, which are perfectly adapted to your needs. These include RDS encoders, FM Radio monitors and CATV systems. KVARTA has a reputation for excellence and innovation among its clients and partners.

Our CATV, DVB/RF Monitoring devices and RDS/RBDS encoders are growing in popularity due to their reliability, quality and functionality at exceptional prices. All of our products have been designed for professional broadcast use and are fully meet the standards. Our devices incorporate embedded web site and SNMP communication.

2. RF Power Monitor Kvarta

2.1.INCLUDED ACCESSORIES FOR 1 LICENSE

In your package, you should receive:

- Your RF Power Monitor
- 2 RF Probes (one for reflected wave, one for forward wave)
- 2 USB cables
- Quick start notice
- AC main power cord
- Straight ethernet cable
- Relay port (OPTIONAL)
- Up to 4 licenses for one RF Power Monitor

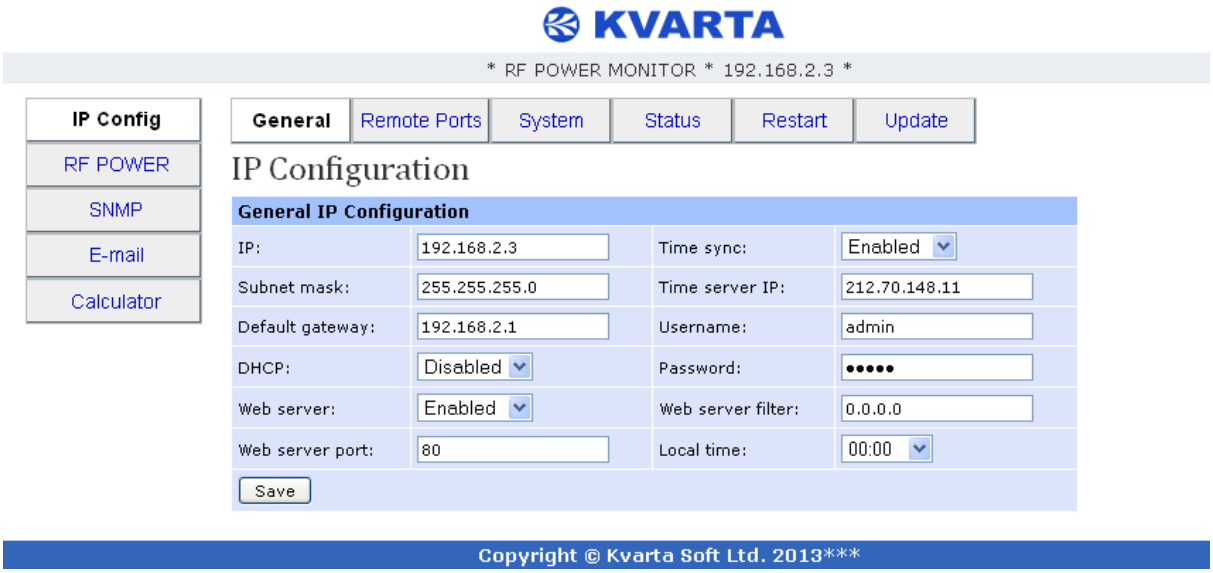
2.2.GENERAL SPECIFICATIONS OF THE RF POWER MONITOR

Communication ports	
Ethernet	100baseT – Web Server and UDP/TCP (SNMP/ASCII)
Web site management	Available
E-mail client	Available
SNMP management	Available
RF Probe Ports	
RF Probes	Up to 8 RF Probes(4 Forward and 4 Reflected probes)in a single 1U unit
RF Probes Connector	USB A (Compatible with RF Probes 1/2/etc.)
Measurements (depend on connected RF Probe model)	
Frequency Range	For detailed specification, please, check RF Probes specification
Forward wave	For detailed specification, please, check RF Probes specification
Reflected wave	For detailed specification, please, check RF Probes specification
Return loss	For detailed specification, please, check RF Probes specification
VSWR	For detailed specification, please, check RF Probes specification
Relay port (optional)	
Outputs	8 Relay ports
Relay port	60V/1A
Monitoring	
Alarms and Warnings	Forward wave(minimum/maximum), Reflected wave(maximum), Return loss(minimum), VSWR(maximum)
Log, E-mail, SNMP traps	Available
Power Supply	
Supply voltage	230V (115V optional)
Voltage tolerance	+/- 10%
Main AC frequency	45-65 Hz
Fuse	0.8A
Consumption	10 VA
Mechanical aspects	
Height	1U (44,5 mm)
Width	483 mm
Depth	220 mm
Net weight	2,5 kg
Info	
Updates	Available
Front panel LEDs	Power supply, LAN, Alarm
Calculator	dBm /W

3. Getting connected

3.1. Connecting to the embedded web site

1. Connect the Ethernet cable between the RJ45 and the network..
2. Open a Web browser (Mozilla ,Internet Explorer, …) and enter the encoder's IP address (Default: **192.168.2.3)** you just set in the previous step. Log in with the default username and password (admin/admin). The home page of the embedded web site is displayed:



NOTE: *Your computer should have IP address which is in the same network.*

3.2.LED Indication

POWER – Indicates that power supply is available.
LAN – Indicates LAN connection ON/OFF.
ALARM - Indicates alarm or warning

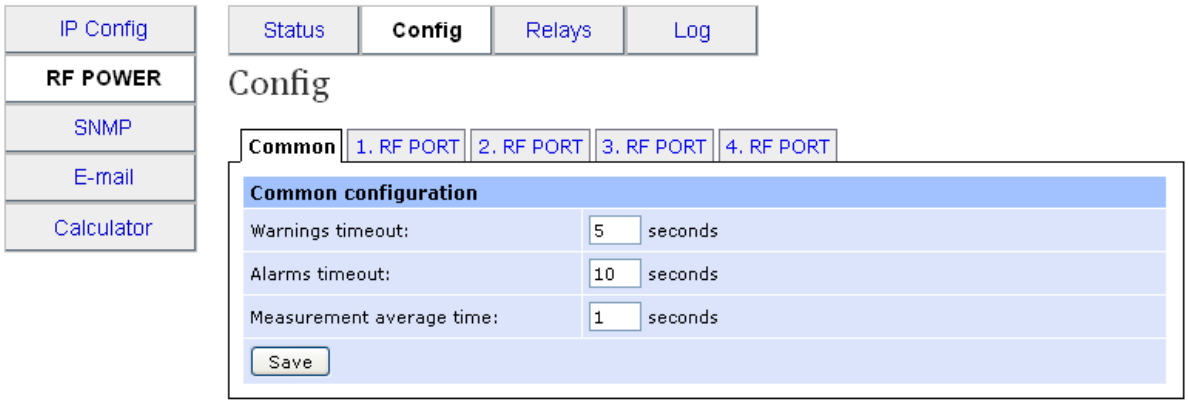
3.3.Back panel

Micro SD – 2GB containing configuration and web site files
LAN – Ethernet connection
RF1_FWD – USB A connector for RF PORT 1, Forward wave probe
RF1_REF – USB A connector for RF PORT 1, Reflected wave probe
RF2_FWD – USB A connector for RF PORT 2, Forward wave probe
RF2_REF – USB A connector for RF PORT 2, Reflected wave probe
RF3_FWD – USB A connector for RF PORT 3, Forward wave probe
RF3_REF – USB A connector for RF PORT 3, Reflected wave probe
RF4_FWD – USB A connector for RF PORT 4, Forward wave probe
RF4_REF – USB A connector for RF PORT 4, Reflected wave probe
IEC Connector – AC Power Supply connection 230V (115V optional)
Relay port – 8 Relays 60V/1A (optional)

4. CONFIGURATION AND OPERATION

4.1. RF Configuration

4.1.1. Common configuration

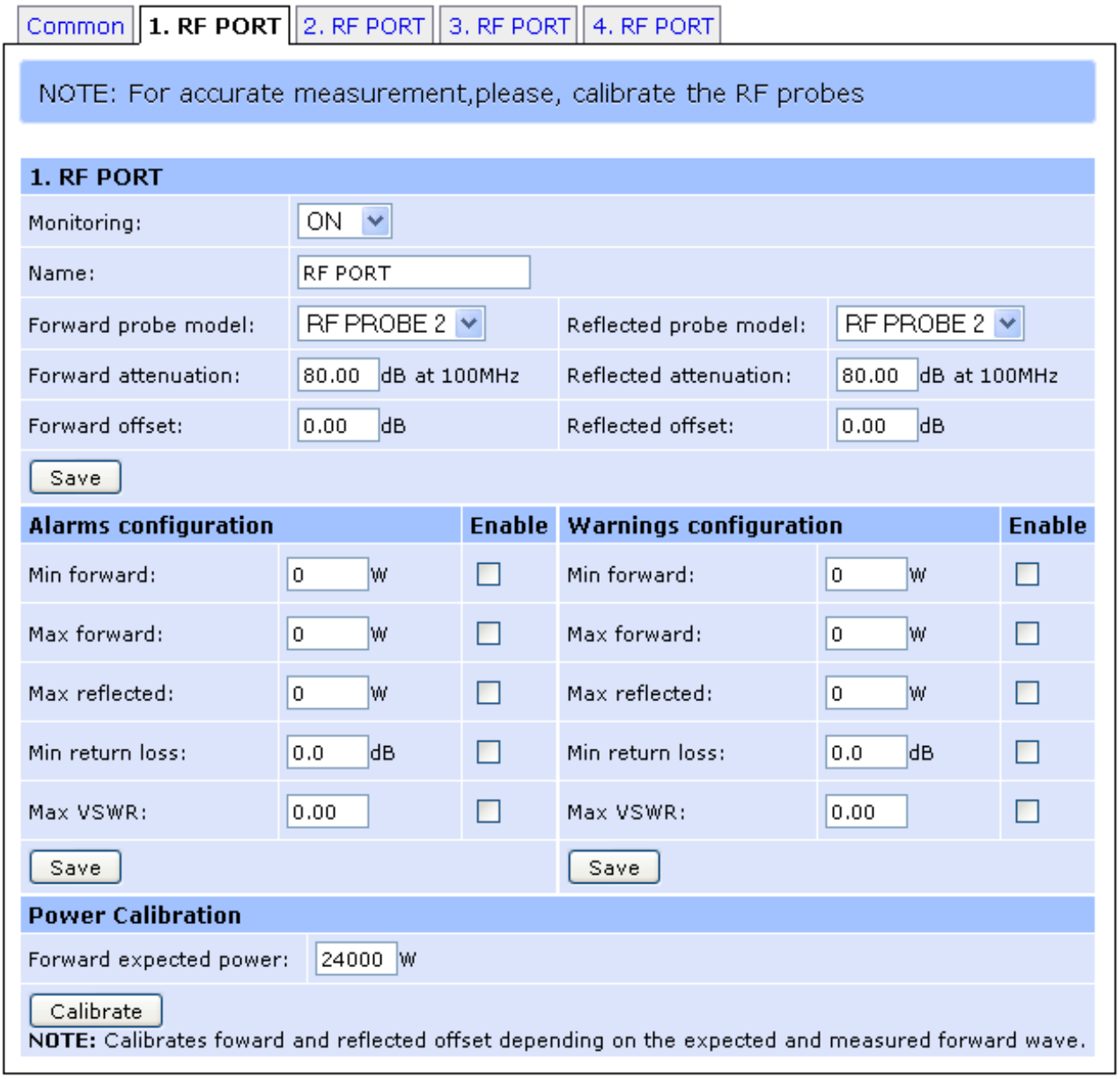


- Open the embedded web page and click **RF Power -> Config -> Common**
- Set the warning timeout (Default: 5 seconds) – the time for a warning to occur, if measured value is out of warning boundary
- Set the alarm timeout (Default: 10 seconds) – the time for an alarm to occur, if measured value is out of alarm boundary
- Measurement average time is the time period of averaging the measurement results (Default: 5 seconds) if you prefer faster measurement response set it to 1 second
- Click Save button below the settings to store the configuration

4.1.2. RF Port Configuration

- Open the embedded web page and click **RF Power -> Config -> 1. RF PORT**
- Connect the RF Probes to the appropriate RF1_FWD and RF1_REF port
- Enable the monitoring of the RF PORT by selecting (**Monitoring -> ON**)
- Select the appropriate Forward/Reflected probe model: RF PROBE 1/2/3
- Select the Forward/Reflected attenuation depending on the directional coupler
- Select the Forward/Reflected offset can be adjusted using the calibration menu at the bottom.
- Click the Save button below the settings to store the configuration
- Select appropriate boundaries for warning and alarms
- Set the enable tick for the alarms/warnings
- Click the Save button below the settings to store the configuration

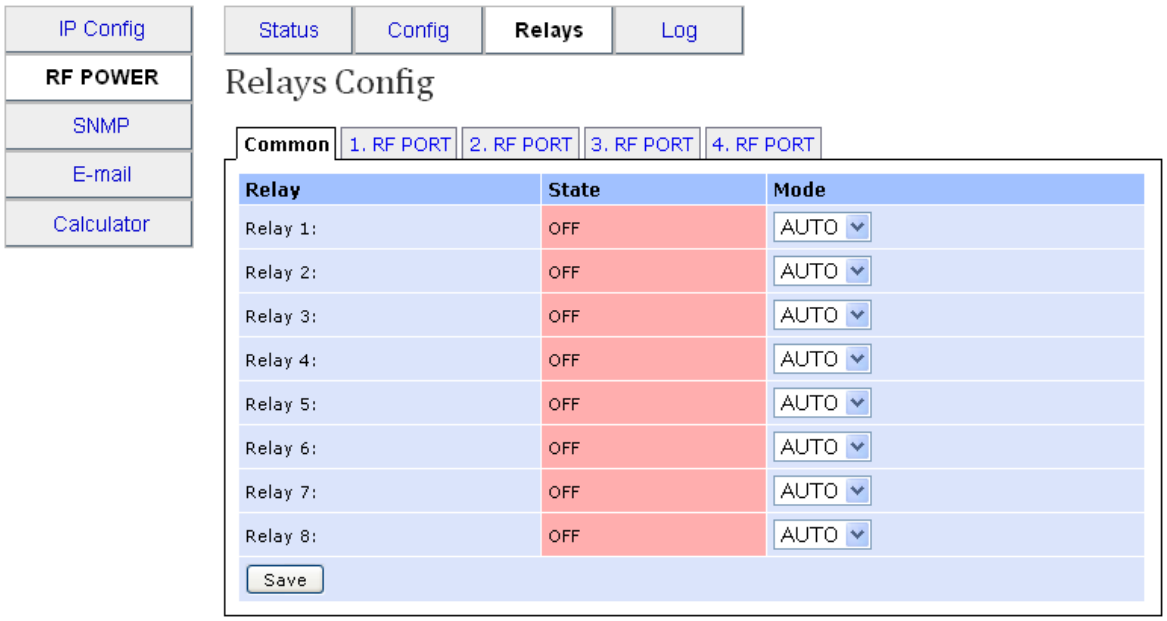
NOTE: For accurate measurements calibration needs to be done, when Forward probe is connected to the directional coupler and the exact expected RF power is set in the calibration menu.



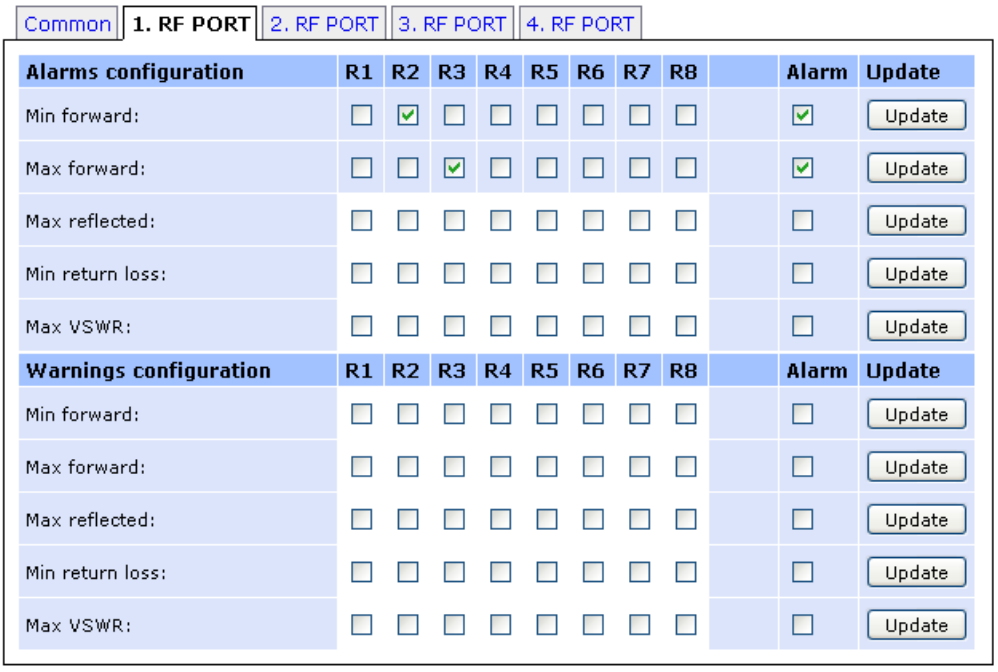
4.2. Relay port configuration (Optional)

- Open the embedded web page and click **RF POWER -> Relays -> Common**
- By default all relay outputs are automatically (Mode: AUTO) set by the alarms/warnings configuration. However, the user can turn ON/OFF any of the relays despite the alarms using the mode selection menu.
- Click the Save button to store any changes in the configuration.

NOTE: The state column shows the current state ON/OFF of the relays



- In order to set which alarm/warning to set which relay port open the embedded web page and click **RF POWER -> Relays -> 1. RF PORT**
- **Example:** In the picture below this configuration will set R2 ON if the Forward wave is below the minimum boundary and R3 ON if the Forward wave is above the maximum boundary.



4.3. RF Monitoring Status

- Checking the status and measured values
- Click **RF Power -> Status**
- This web page constantly displays the measured RF parameters – Forward/Reflected wave, Return loss, VSWR

1. RF PORT		07:41:53	2. RF PORT		07:41:53
Forward:	1685 W	62.2 dBm	Forward:	1591 W	62.0 dBm
Reflected:	2 W	33.1 dBm	Reflected:	1 W	32.9 dBm
Return loss:	29.1 dB		Return loss:	29.1 dB	
VSWR:	1.07		VSWR:	1.07	
3. RF PORT		**07:41:53**	**4. RF PORT**		**07:41:53**
Forward:	1502 W	61.7 dBm	Forward:	1557 W	61.9 dBm
Reflected:	0 W	27.8 dBm	Reflected:	1 W	32.1 dBm
Return loss:	33.9 dB		Return loss:	29.8 dB	
VSWR:	1.04		VSWR:	1.06	

Active alarms and warnings				
Type	**Name**	**Alarm**	**Value**	**Threshold**
ALARM	(1) RF PORT	FORWARD WAVE: HIGH	750 W	10 W
WARNING	(4) RF PORT	FORWARD WAVE: LOW	3422 W	10000 W

NOTE: The green color is OK, yellow for warning and red for alarms.

4.4. Log

- Click **RF Power -> Log**
- Displays log with 20 of the latest alarms and stores all alarms in the last 10 days

Log

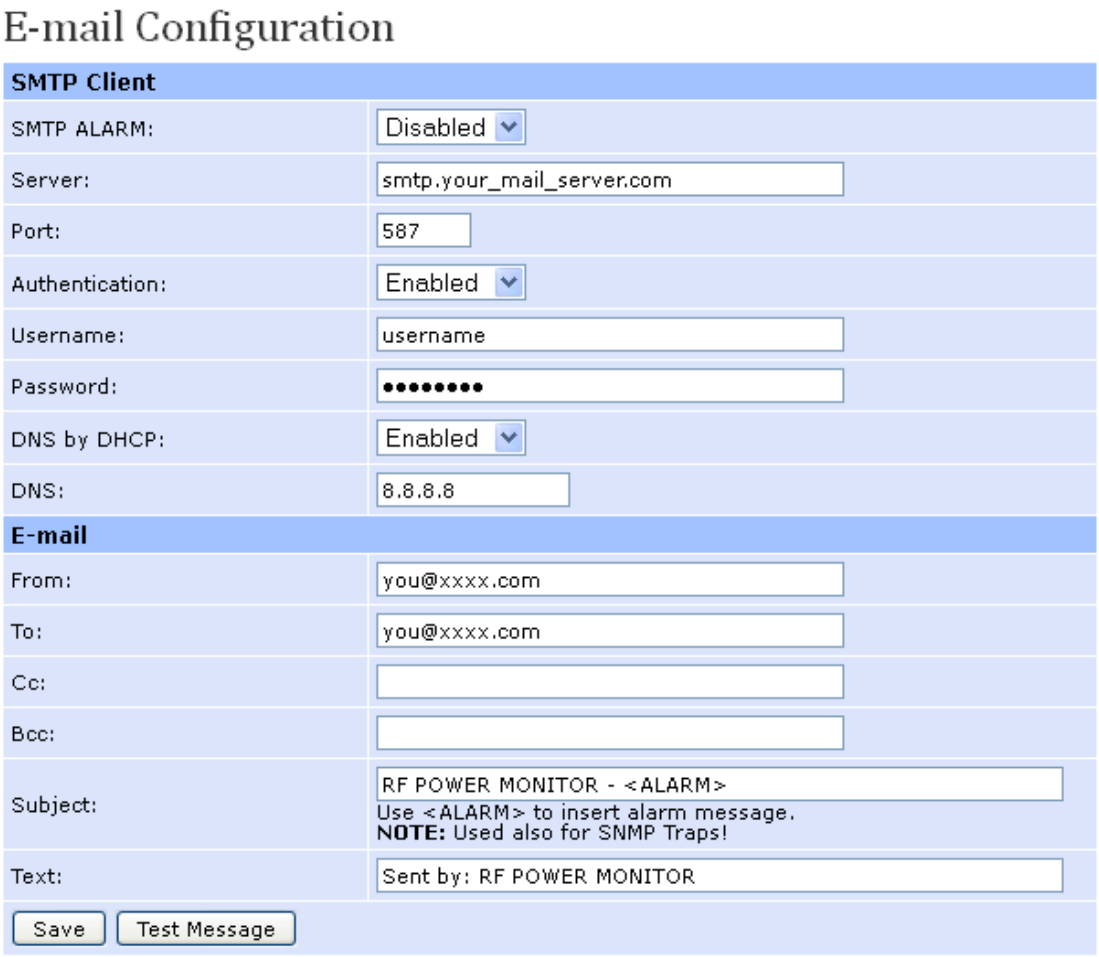
Logged alarms	
Date Type	**File**
02/09/2013 - ALARMS	AL130902.log
01/01/2000 - ALARMS	AL00101.log
30/08/2013 - ALARMS	AL130830.log
27/08/2013 - ALARMS	AL130827.log
26/08/2013 - ALARMS	AL130826.log
20/08/2013 - ALARMS	AL130820.log
19/08/2013 - ALARMS	AL130819.log
12/08/2013 - ALARMS	AL130812.log
05/08/2013 - ALARMS	AL130805.log
04/08/2013 - ALARMS	AL130804.log

Logged alarms		
Time	**Message**	**E-mail**
02/09/2013 06:15:44	ALARM # 1. RF PORT # VSWR: HIGH # 173.71	-
02/09/2013 07:29:43	ALARM # 1. RF PORT # FORWARD WAVE: HIGH # 750 W	-
02/09/2013 07:41:41	WARNING # 4. RF PORT # FORWARD WAVE: LOW # 3422 W	-

4.5. E-mail client configuration

NOTE: RF Power Monitor supports Login authentication (no SSL). For assistance, please, contact us.

- Click **E-mail** in the side menu
- Set appropriate SMTP server and authentication configuration
- Configure e-mail parameter and subject (can include alarm text using the macro <ALARM>)



4.6. SNMP configuration

SNMP Configuration

SNMP MIB file	
Configuration:	RF-POWER-MONITOR-001-MIB.mib
SNMP Configuration	
SNMP:	Enabled
Read only community:	000000000000
Read write community:	private
Traps port:	162
Traps community:	public
Traps server 1 IP:	0.0.0.0
Traps server 2 IP:	0.0.0.0
Traps server 3 IP:	0.0.0.0
Traps server 4 IP:	0.0.0.0
Save	

NOTE: Please, contact us for more support at support@kvarta.net

4.7. Calculator

- Useful when you need to convert from dBm to watts and vice versa.

RF Calculator

dBm to watts converter			Watts to dBm converter		
Enter power in dBm:	30	dBm	Enter watts:	1	W
	Convert			Convert	
Watts result:	1	W	dBm result:	30	dBm

5. GLOSSARY

RF – Radio Frequency

VSWR – Voltage Standing Wave Ratio

SNMP – Simple Network Management Protocol

SMTP – Simple Mail Transfer Protocol

APPENDIX A -
RF POWER MONITOR ASCII COMMAND SET

A.1. DEFAULT VALUES

Parameter	Default Value
IP	192.168.2.3
Mask	255.255.255.0
Gateway	192.168.2.1
DHCP	Disabled
Web Server	Enabled
Web Server : <username>,<password>	admin,admin
CT synchronization:	Enabled
Time server IP :	212.70.148.11

A.2. Configuration and special files on the device

a. **config.ini – Keeps all configuration information (windows configuration file)**

b. **config2.ini – Keeps backup of the main configuration file**

c. **help.txt – ASCII commands description file**

d. *****.mib – SNMP MIB file**

A.3. ASCII COMMANDS

```
-- ************************************************
-- Device Model: RF POWER MONITOR 0.05A (01/08/2013)
-- Auto-generated file!
-- Definitions apply to RF POWER MONITOR
-- Supported ASCII COMMANDS
-- for more information support@kvarta.net
-- Kvarta Soft Ltd (www.kvarta.net)
-- ************************************************

--
-- The 'GENERAL' group;
--

IP                                          read-write      IP Address
MASK                                        read-write      Sub. network mask
GATEWAY                                     read-write      Gateway IP
Address
DHCP                                        read-write      DHCP
Enable/Disable
DNS                                         read-write      DNS Server IP
```

```
DNS_BY_DHCP                                read-write     DNS Server by
DHCP
CT_SERVER_ON                               read-write     Clock time server
used
CT_SERVER_IP                               read-write     Clock time
server(RFC-868)
CT_OFFSET                                  read-write     Clock time offset
LOG                                        read-write     Logs All Ip
connections
USERNAME                                   read-write     Set/Display
username
PASSWORD                                   read-write     Set/Display
password
TCP_TIMEOUT                                read-write     Timeout in
seconds if no communication,close socket
LOG_ALARMS                                 read-write     Daily Log -
ALARMS
MODEL                                      read-only      Device model
VERSION                                    read-only      Firmware version
DEVICE_NAME                                read-write     Name of the
device(Location)
WEB_SNMP_SERVER                            read-only      SNMP Server
On/Off
WEB_SMTP_AUTH                              read-only      E-mail
authentication On/Off
WEB_SMTP_ALARM                             read-only      E-mail alarms
On/Off
MAC                                        read-only      Reads the MAC
address
CURRENT_IP                                 read-only      Reads the current
IP address
CURRENT_MASK                               read-only      Reads the current
sub. network mask
CURRENT_GATEWAY                            read-only      Reads the current
gateway IP address
DHCP_STATUS                                read-only      Reads DHCP status
UPDATE_AVAILABLE                           read-only      Reads if there is
update available
UPDATE_START                               write-only     Starts un update

--
-- The 'WEB' group;
--

WEB.SERVER                                 read-write     Embedded Web
Server On/Off
WEB.PORT                                   read-write     TCP port of the
web server(Default:80)
WEB.FILTER                                 read-write     Allowed HOST IP
to connect to the web server
WEB.VLAN                                   read-write     VLAN of the web
server

--
-- The 'TCP' table;
--

TCP(???).TYPE                              read-write     Remote port
TCP/UDP/OFF
TCP(???).PORT                              read-write     Remote port
TCP/UDP port number
TCP(???).FILTER                            read-write     Remote port input
IP filter
```

```
TCP(???).PROTOCOL                          read-write     Remote port
protocol ASCII/SNMP
TCP(???).VLAN                              read-write     Remote port VLAN

--
-- The 'SNMP' group;
--

SNMP.SERVER                                read-write     SNMP Server
On/Off
SNMP.TRAP_PORT                             read-write     SNMP Traps
destinatio port
SNMP.RO_PASSWORD                           read-write     SNMP read only
community string
SNMP.RW_PASSWORD                           read-write     SNMP read write
community string
SNMP.TRAP_PASSWORD                         read-write     SNMP trap
password
SNMP.TRAP_SERVER1                          read-write     SNMP trap
server(1) IP
SNMP.TRAP_SERVER2                          read-write     SNMP trap
server(2) IP
SNMP.TRAP_SERVER3                          read-write     SNMP trap
server(3) IP
SNMP.TRAP_SERVER4                          read-write     SNMP trap
server(4) IP

--
-- The 'SMTP' group;
--

SMTP.SEND                                  COMMAND        SMTP Send e-mail
command
SMTP.ALARM                                 read-write     SMTP e-mail
alarms Enable/Disable
SMTP.SERVER                                read-write     SMTP server url
address
SMTP.PORT                                  read-write     SMTP server port
SMTP.AUTH                                  read-write     SMTP
authentication enable/disable
SMTP.USER                                  read-write     SMTP
authentication username
SMTP.PASSWORD                              read-write     SMTP
authentication password
SMTP.FROM                                  read-write     E-mail From
address
SMTP.TO                                    read-write     E-mail To address
SMTP.CC                                    read-write     E-mail CC address
SMTP.BCC                                   read-write     E-mail BCC
address
SMTP.SUBJECT                               read-write     E-mail
subject.Macro <ALARM> can be used.
SMTP.TEXT                                  read-write     E-mail signature

--
-- The 'RF_COMMON' group;
--

RF_COMMON.ALARMS_TIMEOUT                   read-write     Alarms timeout
RF_COMMON.WARNINGS_TIMEOUT                 read-write     Warnings timeout
RF_COMMON.AVERAGE_SECONDS                  read-write     Measurement
Average Time
```

```
--
-- The 'RF_CONFIG' table;                                RF probes
configuration
--

RF_CONFIG(???).MONITORING                  read-write     RF forward and
reflected probe monitoring On/Off
RF_CONFIG(???).NAME                        read-write     RF PORT NAME
RF_CONFIG(???).FORWARD_TYPE                read-write     RF forward type -
RF PROBE 1/2/etc.
RF_CONFIG(???).REFLECTED_TYPE              read-write     RF reflected type
- RF PROBE 1/2/etc.
RF_CONFIG(???).FORWARD_OFFSET              read-write     RF forward wave
calibration offset
RF_CONFIG(???).FORWARD_ATT                 read-write     RF forward wave
probe attenuator
RF_CONFIG(???).REFLECTED_OFFSET            read-write     RF reflected wave
calibration offset
RF_CONFIG(???).REFLECTED_ATT               read-write     RF reflected wave
attenuator
RF_CONFIG(???).FORWARD_EXPECTED_W          read-write     RF forward wave
power calibration
RF_CONFIG(???).FORWARD_CALIBRATE_W         COMMAND        Calibrate forward
and reflected offset

--
-- The 'RF_ALARMS' table;                                RF probes alarms
--

RF_ALARMS(???).MIN_FORWARD_ON              read-write     RF minimum
forward wave on/off
RF_ALARMS(???).MIN_FORWARD                 read-write     RF minimum
forward wave
RF_ALARMS(???).MIN_FORWARD_RELAY(???)      read-write     RF minimum
forward wave relay
RF_ALARMS(???).MIN_FORWARD_RELAYS          read-write     RF minimum
forward wave relays
RF_ALARMS(???).MAX_FORWARD_ON              read-write     RF maximum
forward wave on/off
RF_ALARMS(???).MAX_FORWARD                 read-write     RF maximum
forward wave
RF_ALARMS(???).MAX_FORWARD_RELAY(???)      read-write     RF maximum
forward wave relay
RF_ALARMS(???).MAX_FORWARD_RELAYS          read-write     RF maximum
forward wave relays
RF_ALARMS(???).MIN_REFLECTED_ON            read-write     RF minimum
reflected wave on/off
RF_ALARMS(???).MIN_REFLECTED               read-write     RF minimum
reflected wave
RF_ALARMS(???).MIN_REFLECTED_RELAY(???)    read-write     RF minimum
reflected wave relay
RF_ALARMS(???).MIN_REFLECTED_RELAYS        read-write     RF minimum
reflected wave relays
RF_ALARMS(???).MAX_REFLECTED_ON            read-write     RF maximum
reflected wave on/off
RF_ALARMS(???).MAX_REFLECTED               read-write     RF maximum
reflected wave
RF_ALARMS(???).MAX_REFLECTED_RELAY(???)    read-write     RF maximum
reflected wave relay
RF_ALARMS(???).MAX_REFLECTED_RELAYS        read-write     RF maximum
reflected wave relays
RF_ALARMS(???).MIN_RETURN_LOSS_ON          read-write     RF minimum return
loss on/off
```

```
RF_ALARMS(???).MIN_RETURN_LOSS              read-write     RF minimum return
loss
RF_ALARMS(???).MIN_RETURN_LOSS_RELAY(???)   read-write     RF minimum return
loss relay
RF_ALARMS(???).MIN_RETURN_LOSS_RELAYS       read-write     RF minimum return
loss relays
RF_ALARMS(???).MAX_RETURN_LOSS_ON           read-write     RF maximum return
loss on/off
RF_ALARMS(???).MAX_RETURN_LOSS              read-write     RF maximum return
loss
RF_ALARMS(???).MAX_RETURN_LOSS_RELAY(???)   read-write     RF maximum return
loss relay
RF_ALARMS(???).MAX_RETURN_LOSS_RELAYS       read-write     RF maximum return
loss relays
RF_ALARMS(???).MIN_VSWR_ON                  read-write     RF minimum VSWR
on/off
RF_ALARMS(???).MIN_VSWR                     read-write     RF minimum VSWR
RF_ALARMS(???).MIN_VSWR_RELAY(???)          read-write     RF minimum VSWR
relay
RF_ALARMS(???).MIN_VSWR_RELAYS              read-write     RF minimum VSWR
relays
RF_ALARMS(???).MAX_VSWR_ON                  read-write     RF maximum VSWR
on/off
RF_ALARMS(???).MAX_VSWR                     read-write     RF maximum VSWR
RF_ALARMS(???).MAX_VSWR_RELAY(???)          read-write     RF maximum VSWR
relay
RF_ALARMS(???).MAX_VSWR_RELAYS              read-write     RF maximum VSWR
relays

--
-- The 'RF_WARN' table;                                    RF probes warning
--

RF_WARN(???).MIN_FORWARD_ON                 read-write     RF minimum
forward wave on/off
RF_WARN(???).MIN_FORWARD                    read-write     RF minimum
forward wave
RF_WARN(???).MIN_FORWARD_RELAY(???)         read-write     RF minimum
forward wave relay
RF_WARN(???).MIN_FORWARD_RELAYS             read-write     RF minimum
forward wave relays
RF_WARN(???).MAX_FORWARD_ON                 read-write     RF maximum
forward wave on/off
RF_WARN(???).MAX_FORWARD                    read-write     RF maximum
forward wave
RF_WARN(???).MAX_FORWARD_RELAY(???)         read-write     RF maximum
forward wave relay
RF_WARN(???).MAX_FORWARD_RELAYS             read-write     RF maximum
forward wave relays
RF_WARN(???).MIN_REFLECTED_ON               read-write     RF minimum
reflected wave on/off
RF_WARN(???).MIN_REFLECTED                  read-write     RF minimum
reflected wave
RF_WARN(???).MIN_REFLECTED_RELAY(???)       read-write     RF minimum
reflected wave relay
RF_WARN(???).MIN_REFLECTED_RELAYS           read-write     RF minimum
reflected wave relays
RF_WARN(???).MAX_REFLECTED_ON               read-write     RF maximum
reflected wave on/off
RF_WARN(???).MAX_REFLECTED                  read-write     RF maximum
reflected wave
RF_WARN(???).MAX_REFLECTED_RELAY(???)       read-write     RF maximum
reflected wave relay
```

```
RF_WARN(???).MAX_REFLECTED_RELAYS          read-write     RF maximum
reflected wave relays
RF_WARN(???).MIN_RETURN_LOSS_ON            read-write     RF minimum return
loss on/off
RF_WARN(???).MIN_RETURN_LOSS               read-write     RF minimum return
loss
RF_WARN(???).MIN_RETURN_LOSS_RELAY(???)    read-write     RF minimum return
loss relay
RF_WARN(???).MIN_RETURN_LOSS_RELAYS        read-write     RF minimum return
loss relays
RF_WARN(???).MAX_RETURN_LOSS_ON            read-write     RF maximum return
loss on/off
RF_WARN(???).MAX_RETURN_LOSS               read-write     RF maximum return
loss
RF_WARN(???).MAX_RETURN_LOSS_RELAY(???)    read-write     RF maximum return
loss relay
RF_WARN(???).MAX_RETURN_LOSS_RELAYS        read-write     RF maximum return
loss relays
RF_WARN(???).MIN_VSWR_ON                   read-write     RF minimum VSWR
on/off
RF_WARN(???).MIN_VSWR                      read-write     RF minimum VSWR
RF_WARN(???).MIN_VSWR_RELAY(???)           read-write     RF minimum VSWR
relay
RF_WARN(???).MIN_VSWR_RELAYS               read-write     RF minimum VSWR
relays
RF_WARN(???).MAX_VSWR_ON                   read-write     RF maximum VSWR
on/off
RF_WARN(???).MAX_VSWR                      read-write     RF maximum VSWR
RF_WARN(???).MAX_VSWR_RELAY(???)           read-write     RF maximum VSWR
relay
RF_WARN(???).MAX_VSWR_RELAYS               read-write     RF maximum VSWR
relays

--
-- The 'RF_STATUS' table;                                 RF probes status
--

RF_STATUS(???).NAME                        read-only      RF PORT NAME
RF_STATUS(???).FORWARD_ON                  read-only      RF forward probe
avaialable
RF_STATUS(???).FORWARD_W                   read-only      RF forward wave
value W
RF_STATUS(???).FORWARD_DBM                 read-only      RF forward wave
value dBm
RF_STATUS(???).REFLECTED_ON                read-only      RF reflected
probe avaialable
RF_STATUS(???).REFLECTED_W                 read-only      RF reflected wave
value W
RF_STATUS(???).REFLECTED_DBM               read-only      RF reflected wave
value dBm
RF_STATUS(???).RETURN_LOSS                 read-only      RF return loss
RF_STATUS(???).VSWR                        read-only      RF VSWR

--
-- The 'ACTIVE_ALARMS' table;                             Currently active
alarms
--

ACTIVE_ALARMS(???).NAME                    read-only      Alarm rf name
ACTIVE_ALARMS(???).TYPE                    read-only      Warning/Alarm
type
ACTIVE_ALARMS(???).ALARM                   read-only      Alarm message
ACTIVE_ALARMS(???).VALUE                   read-only      Alarm value
```

```
ACTIVE_ALARMS(???).THRESHOLD                read-only      Alarm threshold

--
-- The 'ALARM_LOG' table;                                  Alarms log
--

ALARM_LOG(???).TIME                         read-only      Log item time
ALARM_LOG(???).MESSAGE                      read-only      Log item
description
ALARM_LOG(???).EMAIL                        read-only      Log item e-mail
status

--
-- The 'RELAY' table;                                      Relays
--

RELAY(???).STATE                            read-only      Relay state
RELAY(???).MODE                             read-write     Relay mode
(Off/On/Auto)

--
-- The 'COMMANDS' group;
--

RESET                                       COMMAND        Software reset
(except IP) and reboot of the device
RESTART                                     COMMAND        Software reboot
of the device
```